



## Complete Summary

---

### **GUIDELINE TITLE**

Postpartum hemorrhage.

### **BIBLIOGRAPHIC SOURCE(S)**

American College of Obstetricians and Gynecologists (ACOG). Postpartum hemorrhage. Washington (DC): American College of Obstetricians and Gynecologists (ACOG); 2006 Oct. 10 p. (ACOG practice bulletin; no. 76). [40 references]

### **GUIDELINE STATUS**

This is the current release of the guideline.

### **\*\* REGULATORY ALERT \*\***

### **FDA WARNING/REGULATORY ALERT**

**Note from the National Guideline Clearinghouse:** This guideline references a drug(s) for which important revised regulatory information has been released.

- [July 31, 2008, Erythropoiesis Stimulating Agents \(ESAs\)](#): Amgen and the U.S. Food and Drug Administration (FDA) informed healthcare professionals of modifications to certain sections of the Boxed Warnings, Indications and Usage, and Dosage and Administration sections of prescribing information for Erythropoiesis Stimulating Agents (ESAs). The changes clarify the FDA-approved conditions for use of ESAs in patients with cancer and revise directions for dosing to state the hemoglobin level at which treatment with an ESA should be initiated.
- [November 8, 2007 and January 3, 2008 Update, Erythropoiesis Stimulating Agents \(ESAs\)](#): The U.S. Food and Drug Administration (FDA) notified healthcare professionals of revised boxed warnings and other safety-related product labeling changes for erythropoiesis-stimulating agents (ESAs) stating serious adverse events, such as tumor growth and shortened survival in patients with advanced cancer and chronic kidney failure.

### **COMPLETE SUMMARY CONTENT**

**\*\* REGULATORY ALERT \*\***

SCOPE

METHODOLOGY - including Rating Scheme and Cost Analysis

RECOMMENDATIONS

EVIDENCE SUPPORTING THE RECOMMENDATIONS

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

CONTRAINDICATIONS  
QUALIFYING STATEMENTS  
IMPLEMENTATION OF THE GUIDELINE  
INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT  
CATEGORIES  
IDENTIFYING INFORMATION AND AVAILABILITY  
DISCLAIMER

## SCOPE

### **DISEASE/CONDITION(S)**

Postpartum hemorrhage

### **GUIDELINE CATEGORY**

Evaluation  
Management  
Treatment

### **CLINICAL SPECIALTY**

Emergency Medicine  
Family Practice  
Obstetrics and Gynecology

### **INTENDED USERS**

Physicians

### **GUIDELINE OBJECTIVE(S)**

- To aid practitioners in making decisions about appropriate obstetric and gynecologic care
- To review the etiology, evaluation, and management of postpartum hemorrhage

### **TARGET POPULATION**

- Women during the first 24 hours after delivery (at risk for primary postpartum hemorrhage), especially those with:
  - Uterine atony
  - Retained placenta—especially placenta accreta
  - Defects in coagulation
  - Uterine inversion
- Women between 24 hours and 6–12 weeks after delivery (at risk for secondary postpartum hemorrhage), especially those with:
  - Subinvolution of placental site
  - Retained products of conception
  - Infection
  - Inherited coagulation defects

- Women with other risk factors for postpartum hemorrhage

## **INTERVENTIONS AND PRACTICES CONSIDERED**

### **Evaluation/Management**

1. Multi-disciplinary approach with high clinical suspicion
2. Laboratory evaluation of lost blood
3. Testing for bleeding disorders among patients with menorrhagia
4. Medical management, including use of uterotonic agents
5. Exploratory laparotomy
6. Ultrasonography
7. Drainage of hematomas
8. Uterine compression or massage
9. Tamponade: packing of the uterine cavity, Foley catheter insertion, Sengstaken-Blakemore tube insertion, SOS Bakri tamponade balloon use
10. Surgical management, including uterine curettage and hysterectomy
11. Arterial ligation or embolization
12. Blood component therapy (donor or autologous): packed red cells, platelets, fresh frozen plasma, cryoprecipitate
13. Manual replacement of the uterine corpus
14. Antibiotics

### **Poststabilization Management**

1. Prenatal vitamin and mineral capsules
2. Additional iron tablets
3. Erythropoietin

## **MAJOR OUTCOMES CONSIDERED**

- Time to cessation of bleeding
- Incidence of serious sequelae (adult respiratory distress syndrome, coagulopathy, shock, loss of fertility, and pituitary necrosis)
- Loss of fertility
- Mortality

## **METHODOLOGY**

### **METHODS USED TO COLLECT/SELECT EVIDENCE**

Hand-searches of Published Literature (Primary Sources)  
 Hand-searches of Published Literature (Secondary Sources)  
 Searches of Electronic Databases

### **DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE**

The MEDLINE database, the Cochrane Library, and the American College of Obstetricians and Gynecologists' own internal resources and documents were used to conduct a literature search to locate relevant articles published between January 1901 and June 2006. The search was restricted to articles published in

the English language. Priority was given to articles reporting results of original research, although review articles and commentaries also were consulted. Abstracts of research presented at symposia and scientific conferences were not considered adequate for inclusion in this document. Guidelines published by organizations or institutions such as the National Institutes of Health and American College of Obstetricians and Gynecologists were reviewed, and additional studies were located by reviewing bibliographies of identified articles.

## **NUMBER OF SOURCE DOCUMENTS**

Not stated

## **METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE**

Weighting According to a Rating Scheme (Scheme Given)

## **RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE**

Studies were reviewed and evaluated for quality according to the method outlined by the U.S. Preventive Services Task Force:

**I:** Evidence obtained from at least one properly designed randomized controlled trial.

**II-1:** Evidence obtained from well-designed controlled trials without randomization.

**II-2:** Evidence obtained from well-designed cohort or case-control analytic studies, preferably from more than one center or research group.

**II-3:** Evidence obtained from multiple time series with or without the intervention. Dramatic results in uncontrolled experiments also could be regarded as this type of evidence.

**III:** Opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees.

## **METHODS USED TO ANALYZE THE EVIDENCE**

Systematic Review

## **DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE**

Not stated

## **METHODS USED TO FORMULATE THE RECOMMENDATIONS**

Expert Consensus

## DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Analysis of available evidence was given priority in formulating recommendations. When reliable research was not available, expert opinions from obstetrician-gynecologists were used. See also the "Rating Scheme for the Strength of Recommendations" field regarding Grade C recommendations.

## RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Based on the highest level of evidence found in the data, recommendations are provided and graded according to the following categories:

**Level A** — Recommendations are based on good and consistent scientific evidence.

**Level B** — Recommendations are based on limited or inconsistent scientific evidence.

**Level C** — Recommendations are based primarily on consensus and expert opinion.

## COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

## METHOD OF GUIDELINE VALIDATION

Internal Peer Review

## DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Practice Bulletins are validated by two internal clinical review panels composed of practicing obstetrician-gynecologists generalists and sub-specialists. The final guidelines are also reviewed and approved by the American College of Obstetricians and Gynecologists (ACOG) Executive Board.

## RECOMMENDATIONS

### MAJOR RECOMMENDATIONS

The grades of evidence (I-III) and levels of recommendations (A-C) are defined at the end of the "Major Recommendations" field.

**The following recommendations and conclusions are based primarily on consensus and expert opinion (Level C):**

- Uterotonic agents should be the first-line treatment for postpartum hemorrhage due to uterine atony.

- Management may vary greatly among patients, depending on etiology and available treatment options, and often a multidisciplinary approach is required.
- When uterotonics fail following vaginal delivery, exploratory laparotomy is the next step.
- In the presence of conditions known to be associated with placenta accreta, the obstetric care provider must have a high clinical suspicion and take appropriate precautions.

### **Definitions:**

### **Grades of Evidence**

**I:** Evidence obtained from at least one properly designed randomized controlled trial.

**II-1:** Evidence obtained from well-designed controlled trials without randomization.

**II-2:** Evidence obtained from well-designed cohort or case-control analytic studies, preferably from more than one center or research group.

**II-3:** Evidence obtained from multiple time series with or without the intervention. Dramatic results in uncontrolled experiments also could be regarded as this type of evidence.

**III:** Opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees.

### **Levels of Recommendations**

**Level A** — Recommendations are based on good and consistent scientific evidence.

**Level B** — Recommendations are based on limited or inconsistent scientific evidence.

**Level C** — Recommendations are based primarily on consensus and expert opinion.

### **CLINICAL ALGORITHM(S)**

None provided

## **EVIDENCE SUPPORTING THE RECOMMENDATIONS**

### **TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS**

The type of supporting evidence is identified and graded for each recommendation (see "Major Recommendations").

## BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

### POTENTIAL BENEFITS

Appropriate evaluation and management of women with postpartum hemorrhage

### POTENTIAL HARMS

- Undiluted rapid oxytocin IV infusion causes hypotension.
- Care must be taken in performing curettage to avoid perforation of the uterus.

## CONTRAINDICATIONS

### CONTRAINDICATIONS

- Relative contraindication for 15-methylprostaglandin F<sub>2a</sub> in patients with hepatic, renal, and cardiac disease. Diarrhea, fever, tachycardia can occur.
- Avoid methylergonovine if patient is hypertensive.
- Avoid 15-methylprostaglandin F<sub>2a</sub> in asthmatic patients.
- Avoid dinoprostone if patient is hypotensive. Fever is common.

## QUALIFYING STATEMENTS

### QUALIFYING STATEMENTS

These guidelines should not be construed as dictating an exclusive course of treatment or procedure. Variations in practice may be warranted based on the needs of the individual patient, resources, and limitations unique to the institution or type of practice.

## IMPLEMENTATION OF THE GUIDELINE

### DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

### IMPLEMENTATION TOOLS

Audit Criteria/Indicators

For information about [availability](#), see the "Availability of Companion Documents" and "Patient Resources" fields below.

## INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

### IOM CARE NEED

Getting Better

## **IOM DOMAIN**

Effectiveness  
Timeliness

## **IDENTIFYING INFORMATION AND AVAILABILITY**

### **BIBLIOGRAPHIC SOURCE(S)**

American College of Obstetricians and Gynecologists (ACOG). Postpartum hemorrhage. Washington (DC): American College of Obstetricians and Gynecologists (ACOG); 2006 Oct. 10 p. (ACOG practice bulletin; no. 76). [40 references]

### **ADAPTATION**

Not applicable: The guideline was not adapted from another source.

### **DATE RELEASED**

2006 Oct

### **GUIDELINE DEVELOPER(S)**

American College of Obstetricians and Gynecologists - Medical Specialty Society

### **SOURCE(S) OF FUNDING**

American College of Obstetricians and Gynecologists (ACOG)

### **GUIDELINE COMMITTEE**

American College of Obstetricians and Gynecologists (ACOG) Committee on Practice Bulletins-Obstetrics

### **COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE**

Not stated

### **FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST**

Not stated

### **GUIDELINE STATUS**

This is the current release of the guideline.



## **GUIDELINE AVAILABILITY**

Electronic copies: None available

Print copies: Available for purchase from the American College of Obstetricians and Gynecologists (ACOG) Distribution Center, PO Box 4500, Kearneysville, WV 25430-4500; telephone, 800-762-2264, ext. 192; e-mail: [sales@acog.org](mailto:sales@acog.org). The ACOG Bookstore is available online at the [ACOG Web site](#).

## **AVAILABILITY OF COMPANION DOCUMENTS**

Proposed performance measures are included in the original guideline document.

## **PATIENT RESOURCES**

None available

## **NGC STATUS**

This NGC summary was completed by ECRI Institute on August 2, 2007. The information was verified by the guideline developer on September 10, 2007. This summary was updated by ECRI Institute on March 21, 2008 following the FDA advisory on Erythropoiesis Stimulating Agents. This summary was updated by ECRI Institute on August 15, 2008 following the U.S. Food and Drug Administration advisory on Erythropoiesis Stimulating Agents (ESAs).

## **COPYRIGHT STATEMENT**

This NGC summary is based on the original guideline, which is subject to the guideline developer's copyright restrictions.

## **DISCLAIMER**

### **NGC DISCLAIMER**

The National Guideline Clearinghouse™ (NGC) does not develop, produce, approve, or endorse the guidelines represented on this site.

All guidelines summarized by NGC and hosted on our site are produced under the auspices of medical specialty societies, relevant professional associations, public or private organizations, other government agencies, health care organizations or plans, and similar entities.

Guidelines represented on the NGC Web site are submitted by guideline developers, and are screened solely to determine that they meet the NGC Inclusion Criteria which may be found at <http://www.guideline.gov/about/inclusion.aspx>.

NGC, AHRQ, and its contractor ECRI Institute make no warranties concerning the content or clinical efficacy or effectiveness of the clinical practice guidelines and

related materials represented on this site. Moreover, the views and opinions of developers or authors of guidelines represented on this site do not necessarily state or reflect those of NGC, AHRQ, or its contractor ECRI Institute, and inclusion or hosting of guidelines in NGC may not be used for advertising or commercial endorsement purposes.

Readers with questions regarding guideline content are directed to contact the guideline developer.

© 1998-2008 National Guideline Clearinghouse

Date Modified: 10/20/2008

